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Discovered little more than a decade ago, optogenetics – a revolutionary technique combining genetic and optical methods to observe and control the function of neurons – is now a widely used research tool. This volume explores the discovery and application of optogenetics, from the basic science to its potential clinical use. Chapters cover a range of optogenetics applications, including for brain circuits, plasticity, memory, learning, sleep, vision and neurodegenerative and neuropsychiatric diseases. This is an ideal resource for researchers and graduate students as well as for those working in the biotechnology and pharmaceutical industries and in a clinical setting.

Krishnarao Appasani is the Founder and Chief Executive Officer of GeneExpression Systems. He is an award winning scientist, and the editor of numerous books including *Genome-Wide Association Studies* (2016) and *Epigenomics* (2012).

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